

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE  
DALLAS, TEXAS 75202-2733

SUBJECT: Plug and Abandonment Procedure for Personia Well # 11  
EPA file # OS1416, Osage Petroleum Reserve  
Location: SE/4 NW/4 SW/4 Section 17-T27N-R8E, Osage County, OK

Following is the plugging procedure for the subject well:

Capacities:	5.5" O.D. 15.5#/ft casing,	.1336 ft <sup>3</sup> /ft, .0238 bbls/ft
	7 7/8" hole,	.3382 ft <sup>3</sup> /ft, .0602 bbls/ft
	8 5/8" 24 #/ft casing,	.3575 ft <sup>3</sup> /ft, .0636 bbls/ft

***Region 6 Environmental Protection Agency Staff will a conduct site visit to the abandoned well on December 11, 2002 at 10:00 a.m. Mr. Kent Sanborn of the Region 6 Staff will meet all contractors interested in viewing the site at the Osage Tribal Complex in Pawhuska, OK at the aforementioned time and date. Mr. Sanborn will address questions concerning the work to be done only during the site visit. Any questions or concerns prior to or after the visit should be addressed to Mr. Tyrone Hoskins. He can be reached at (214) 665-7375.***

1. At least five working days prior to the plugging operation, notify Mr. Kent Sanborn at EPA's Pawhuska field office (918-557-1615) and notify Mr. Richard Winlock of the BIA (918-287-1351), so that a representative may be present to witness the plug and abandonment. The EPA or BIA witness may be required to modify the details of the plugging procedure based on the well bore conditions encountered during the plugging operation. This procedure is based on the condition of the well bore depicted by records on file. Cement should be Class "A" or Class "H" and have a yield of 1.18 ft<sup>3</sup> per sack.
2. Unseat packer and pull 2 3/8" tubing and packer. The packer is set at approximately 2450'.
3. Displace the casing string with 9 #/gallon mud to stabilize the hole.
4. A cement plug is required to be set from TD to 2429'. Wait on cement and tag top of cement plug. The cement plug can be tagged using tubing or wire-line.
5. Measure the free point of the 5 1/2" by pulling up on the casing, measure the stretch in inches and force in pounds (from the gauge on the rig) and calculate the free point.

$$\text{free point} = 15.5 \text{ \#/ft} * \text{stretch(inches)} * 735,000 / \text{force(lbs)}$$

The estimated top of cement is 1458'; the 5 ½" casing should be shot off at 800', unless the free point measures less than 800 ft. If the free point is at a greater depth than 800', the plugging contractor may cut the casing lower if desired (see Alternative P&A'd Well Bore Configurations). Pull the 5 ½" casing.

6. If the casing is cut at 800' place a plug from the cut-off point to 482'. Wait on cement and then tag top of cement. If the casing is cut lower than 800' set a 100' plug at the cut-off point; wait on cement and then tag top of cement. Pull tubing to 655' and place a plug from 655' to 482'. Wait on cement then tag top of cement.
7. Pull tubing to 60' pump 9 ppg mud down tubing and establish circulation. Pump sufficient cement volume to circulate cement to within 3 feet of surface.
8. The 8 5/8" casing is to be cut 3 feet below ground level and the well bore capped with a 1/4" thick metal plate. The plate shall contain the following inscription information: legal description, lease name and well number, Osage inventory number, and date. The plate shall be welded in place.

Plate inscription:

SE/4 NW/4 SW/4 Section 17-T27N-R8E

Personia No. 11

Inventory Number: OS1416

Date Well Plugged:

Note: The date inscribed on plate shall be the date the well was plugged and abandoned and shall be reported on Osage Form 139.

9. Working pit: If a working pit is required, a steel tank shall be used. This tank will be used as a working pit to catch any fluids circulated to the surface. The plugger is responsible for maintaining fluid level in the tank such that overflow does not occur. The tank is required to be emptied and the waste disposed of into an authorized facility.
10. Surface restoration: The surface of the lands disturbed in connection with the conduct of operations shall be restored. Soils removed in order to cut the surface casing 3 feet below ground level will be replaced and compacted. Recontouring a small area around the well bore may be necessary after the well is plugged.
11. The Contractor is responsible for the disposal of any casing and any other equipment salvaged in the plugging of this well. This material is to be removed from the site and/or lease prior to payment of the contract.

12. Within 30 days of completion of operations the contractor shall complete and submit an original and 4 copies of the plugging report (Osage Form 139) to the EPA Pawhuska office:

EPA Pawhuska Section  
Osage Nations Federal Programs  
627 Grandview Avenue  
Pawhuska, OK 74056

One copy to the BIA office:

Bureau of Indian Affairs  
Minerals Branch  
P.O. Box 1539  
Pawhuska, OK 74056

One copy to the Osage Agency:

Osage UIC Office  
Osage Agency Campus  
P.O. Box 1495  
Pawhuska, OK 74056

Form 139 should summarize operations performed and include all pertinent dates and results of operations including depths and volume of cement plugs, casing cut-off point and any other pertinent information relating to the well plugging procedure.